

DERWENT-ACC-NO: **1995-368016**
DERWENT-WEEK: 200051
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TITLE: Insulation measurement method for decentralised power system, e.g. solar power generator - involves short circuiting power source electric path, supplying high voltage across path and grounded point, and measuring current to determine insulation state based on current flows

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PATENT-ASSIGNEE: CANON KK [CANO], SANYO ELECTRIC CO LTD[SAOL]

PRIORITY-DATA:
1995JP-0089286 (April 14, 1995)
, 1994JP-0114110 (April 30, 1994)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 679898 A2	November 2, 1995	E	022	G01R 031/02
KR 184651 B1	April 15, 1999	N/A	000	G01R 031/12
JP 08015345 A	January 19, 1996	N/A	012	G01R 027/08
EP 679898 A3	July 31, 1996	N/A	000	G01R 031/02
CN 1120672 A	April 17, 1996	N/A	000	G01R 027/08
US 5712572 A	January 27, 1998	N/A	019	H01H 031/12

DESIGNATED-STATES: CH DE ES FR GB IT LI

CITED-DOCUMENTS: No-SR.Pub; 3.Jnl.Ref ; DE 4109586 ; EP 311376 ; JP 04166773
; JP 57119264 ; US 4206398 ; US 4638245 ; US 5155441

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
EP 679898A2	N/A	1995EP-0302930	April 28, 1995
KR 184651B1	N/A	1995KR-0010628	April 29, 1995
JP 08015345A	N/A	1995JP-0089286	April 14, 1995
EP 679898A3	N/A	1995EP-0302930	April 28, 1995

CN 1120672A	N/A	1995CN-0105035	April 27, 1995
US 5712572A	N/A	1995US-0429228	April 25, 1995

INT-CL (IPC): G01R027/08; G01R031/02 ; G01R031/12 ; H01H031/12 ;
H01L031/04 ; H02J003/38
ABSTRACTED-PUB-NO: EP 679898A

BASIC-ABSTRACT:

The method involves using a two-circuit change-over switch (24) which connects a power source, e.g. a solar cell array (1) or wind generator, and an converter, e.g. AC/DC or AC/AC. During the night when the array is not functioning the switch shorts the input terminals (2a,2b) and disconnects the array.

A measurement switch (252) is turned on by an operating unit (251) when the array is not in use and connects a high voltage source (26) to the electric path (30). A current detector (254) measures any current flowing and supplies the value to an insulation judgement unit (253) which calculates the insulation resistance. The output from the detector is supplied to the inverter control circuit (22) and a display unit (28).

ADVANTAGE - Checks system regularly for ground faults to predict failures.

ABSTRACTED-PUB-NO: US 5712572A

EQUIVALENT-ABSTRACTS: The method involves using a two-circuit change-over

switch (24) which connects a power source, e.g. a solar cell array (1) or wind generator, and an converter, e.g. AC/DC or AC/AC. During the night when the array is not functioning the switch shorts the input terminals (2a,2b) and disconnects the array.

A measurement switch (252) is turned on by an operating unit (251) when the array is not in use and connects a high voltage source (26) to the electric path (30). A current detector (254) measures any current flowing and supplies the value to an insulation judgement unit (253) which calculates the insulation resistance. The output from the detector is supplied to the inverter control circuit (22) and a display unit (28).

ADVANTAGE - Checks system regularly for ground faults to predict failures.

CHOSEN-DRAWING: Dwg.1/12 Dwg.1/12

DERWENT-CLASS: S01 X15

EPI-CODES: S01-G04A5; X15-A09;

L Number	Hits	Search T xt	DB	Time stamp
1	49	("6304243" "4431152" "4528503" "4353161" "5945839" "4786864" "6331670" "5026468" "4430519" "5214595" "4384259" "4478210" "4397305" "4409959" "4413615" "4604494" "4106482" "5015086" "5720452" "6005183" "6218605" "6317248" "4266531" "4307710" "4443978" "5520747" "5969501" "4346696" "5501046" "4244354" "4292956" "4292955" "4327707" "4381276" "4420922" "4435919" "5408990" "5513075" "4491681" "5433570" "5519324" "5437129" "5226827" "4247814" "4347477" "4498042" "6118277" "4322261" "4324230").pn.	USPAT; US-PGPUB	2002/11/29 09:12
2	4940	withstand ADJ voltage	USPAT; US-PGPUB	2002/11/29 09:19
3	36473	solar	USPAT; US-PGPUB	2002/11/29 09:20
4	105	(withstand ADJ voltage) AND solar	USPAT; US-PGPUB	2002/11/29 09:20
5	3	((("6304243" "4431152" "4528503" "4353161" "5945839" "4786864" "6331670" "5026468" "4430519" "5214595" "4384259" "4478210" "4397305" "4409959" "4413615" "4604494" "4106482" "5015086" "5720452" "6005183" "6218605" "6317248" "4266531" "4307710" "4443978" "5520747" "5969501" "4346696" "5501046" "4244354" "4292956" "4292955" "4327707" "4381276" "4420922" "4435919" "5408990" "5513075" "4491681" "5433570" "5519324" "5437129" "5226827" "4247814" "4347477" "4498042" "6118277" "4322261" "4324230").pn.) AND ((withstand ADJ voltage) AND solar)	USPAT; US-PGPUB	2002/11/29 09:59
6	19404	insulat\$4 NEAR2 resist\$4	USPAT; US-PGPUB	2002/11/29 10:00
7	451	solar AND (insulat\$4 NEAR2 resist\$4)	USPAT; US-PGPUB	2002/11/29 10:01
8	0	((("6304243" "4431152" "4528503" "4353161" "5945839" "4786864" "6331670" "5026468" "4430519" "5214595" "4384259" "4478210" "4397305" "4409959" "4413615" "4604494" "4106482" "5015086" "5720452" "6005183" "6218605" "6317248" "4266531" "4307710" "4443978" "5520747" "5969501" "4346696" "5501046" "4244354" "4292956" "4292955" "4327707" "4381276" "4420922" "4435919" "5408990" "5513075" "4491681" "5433570" "5519324" "5437129" "5226827" "4247814" "4347477" "4498042" "6118277" "4322261" "4324230").pn.) AND (solar AND (insulat\$4 NEAR2 resist\$4))	USPAT; US-PGPUB	2002/11/29 10:01

L Number	Hits	Search Text	DB	Time stamp
1	4940	withstand ADJ voltage	USPAT;	2002/11/29 11:13
2	20782	insulat\$5 NEAR2 resist\$5	US-PGPUB	2002/11/29 11:13
3	24	(withstand ADJ voltage) SAME solar	USPAT;	2002/11/29 10:22
4	63551	324/\$.ccls.	US-PGPUB	2002/11/29 10:10
5	1	((withstand ADJ voltage) SAME solar) AND 324/\$.ccls.	USPAT;	2002/11/29 10:11
6	90	(insulat\$5 NEAR2 resist\$5) SAME solar	US-PGPUB	2002/11/29 10:22
8	6	324/\$.ccls. AND ((insulat\$5 NEAR2 resist\$5) SAME solar)	USPAT;	2002/11/29 10:24
10	406	(withstand ADJ voltage) AND (insulat\$5 NEAR2 resist\$5)	US-PGPUB	2002/11/29 10:24
11	4	((withstand ADJ voltage) AND (insulat\$5 NEAR2 resist\$5)) AND solar	USPAT;	2002/11/29 10:24
9	84	((insulat\$5 NEAR2 resist\$5) SAME solar) NOT (324/\$.ccls. AND ((insulat\$5 NEAR2 resist\$5) SAME solar))	US-PGPUB	2002/11/29 10:25
20	248	(withstand ADJ voltage) WITH (test\$3 OR check\$3 OR analy\$4 OR inspect\$3)	USPAT;	2002/11/29 12:11
29	8253	withstand ADJ voltage	US-PGPUB	2002/11/29 11:13
30	27696	insulat\$5 NEAR2 resist\$5	EPO; JPO; DERWENT; IBM_TDB	2002/11/29 11:14
31	35	(withstand ADJ voltage) AND solar	EPO; JPO; DERWENT; IBM_TDB	2002/11/29 11:14
32	1632	(insulat\$5 NEAR2 resist\$5) AND (test\$3 OR check\$3 OR analy\$4 OR inspect\$3)	EPO; JPO; DERWENT; IBM_TDB	2002/11/29 12:13
33	4	((insulat\$5 NEAR2 resist\$5) AND (test\$3 OR check\$3 OR analy\$4 OR inspect\$3)) AND solar	EPO; JPO; DERWENT; IBM_TDB	2002/11/29 12:12
34	549	(withstand ADJ voltage) AND (test\$3 OR check\$3 OR analy\$4 OR inspect\$3)	EPO; JPO; DERWENT; IBM_TDB	2002/11/29 12:14
35	3	((withstand ADJ voltage) AND (test\$3 OR check\$3 OR analy\$4 OR inspect\$3)) AND solar	EPO; JPO; DERWENT; IBM_TDB	2002/11/29 12:14

	Document ID	Issue Date	Title	Current OR	Current XRef	Inventor
1	US 6300556 B1	20011009	Solar cell module	136/251	136/259	Yamagishi, Hideo et al.
2	US 5712572 A	19980127	Insulation state measurement method, insulation state judgement apparatus, and dispersion type power generating system using the	324/551	324/509	Tamechika, Masanari et al.
3	US 20010048605 A1	20011206	Power converting apparatus, control method therefor, and solar power generation apparatus	363/56.03		Kurokami, Seiji et al.
4	JP 11274522 A	19991008	Solar battery module torsion tester for investigating mechanical endurance of solar battery - has stress addition equipment which adds stress to solar battery module fixed inbetween upper board and under plate			
5	EP 679898 A	19951102	Insulation measurement method for decentralised power system, e.g. solar power generator - involves short circuiting power source electric path, supplying high voltage across path and grounded point, and measuring current to determine insulation state based on current			FUKAE, K et al.
6	JP 07235685 A	19950905	STAND-VOLTAGE TESTING METHOD OF SOLARLIGHT POWER GENERATION PANEL			WATANABE, ISAO et al.